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(54) Cavity-walled tents

(57) The tent 10 comprises a spider-like framework of rods 11 supporting a sheet material having inner 24 and outer 25 fabric sheets secured to each other by flexible fabric strips 29 to provide a cavity 30 therebetween. This prevents condensation within tent 10 when a large temperature differential exists between the inside and the outside.

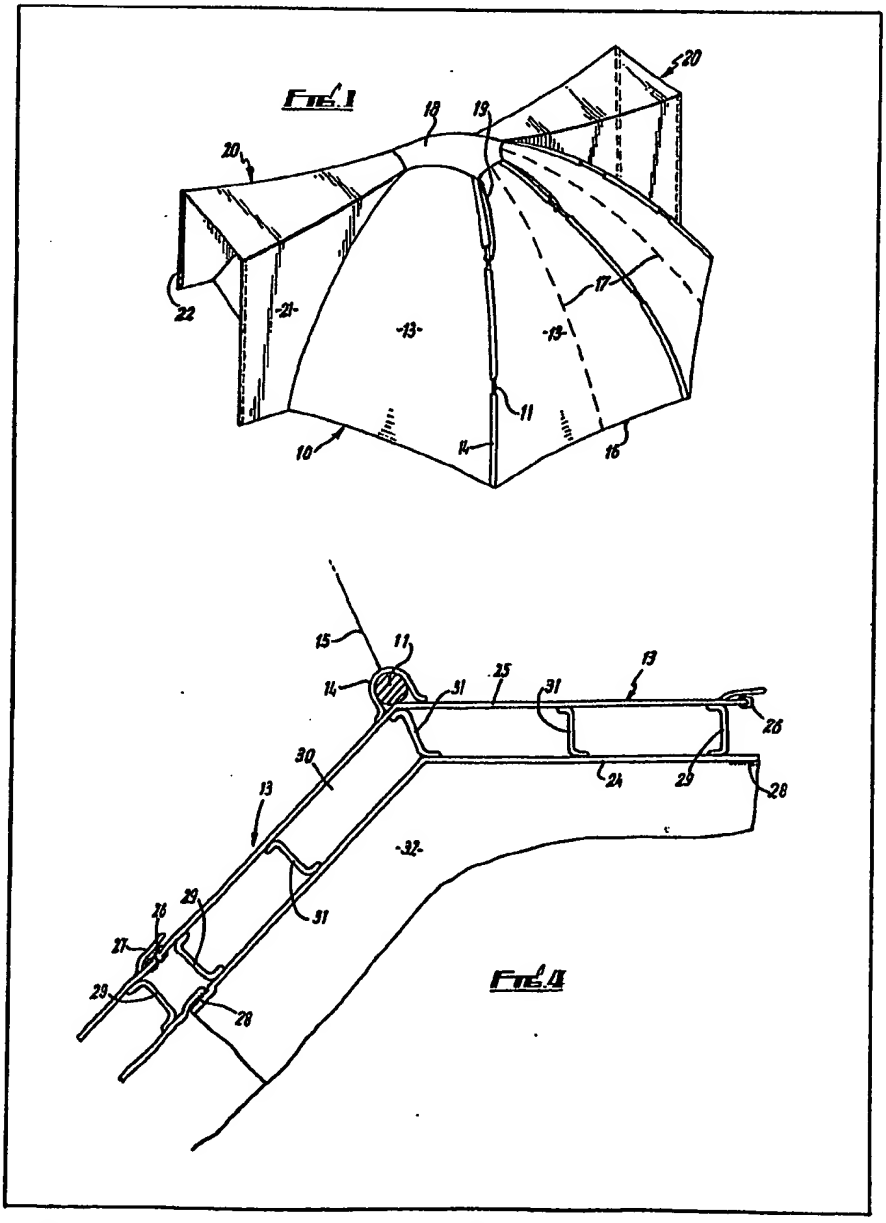

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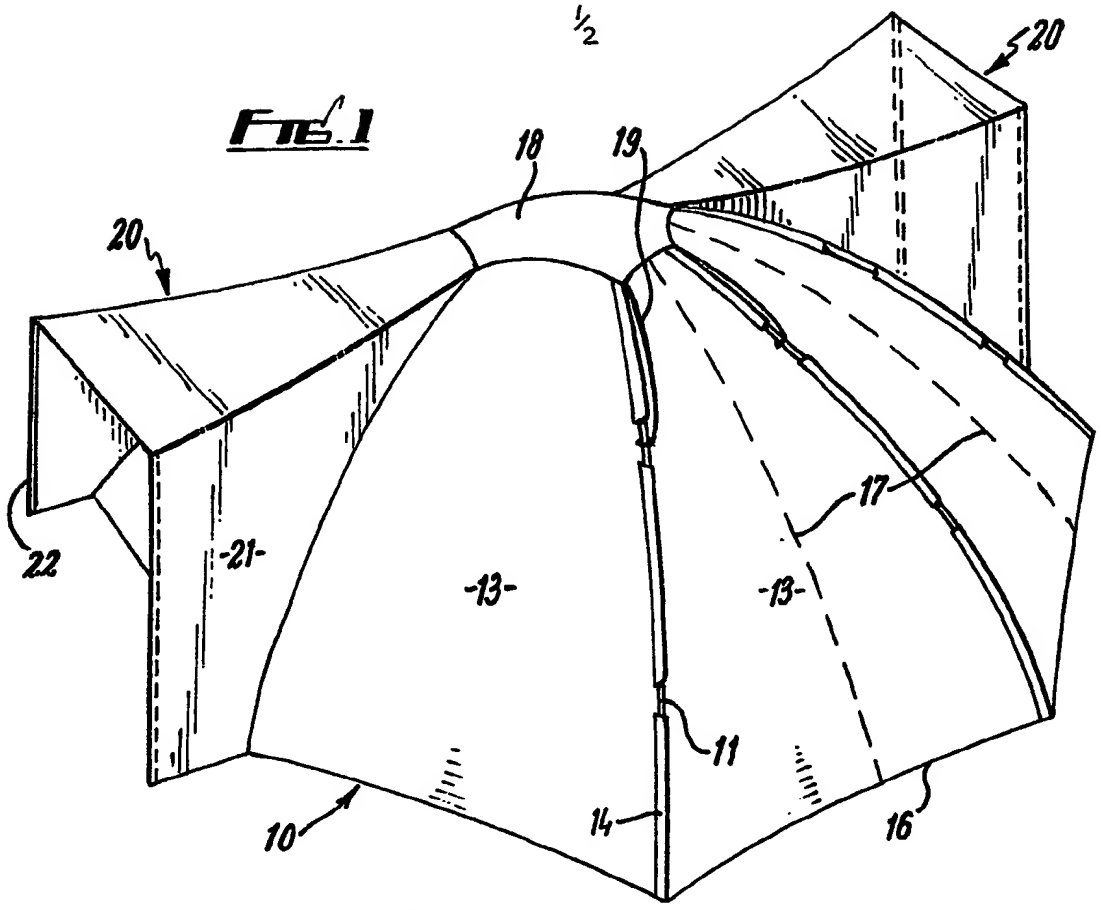
FIG.1



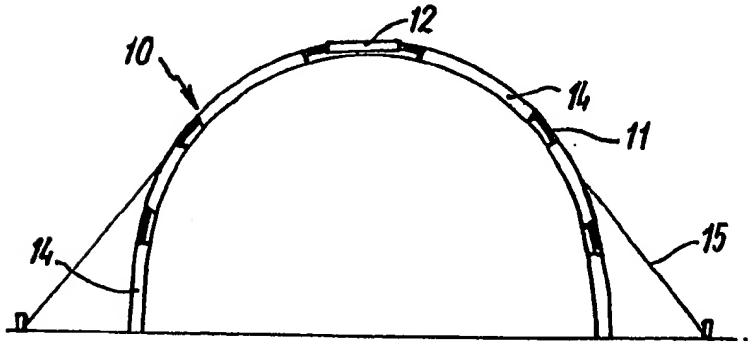


FIG.2

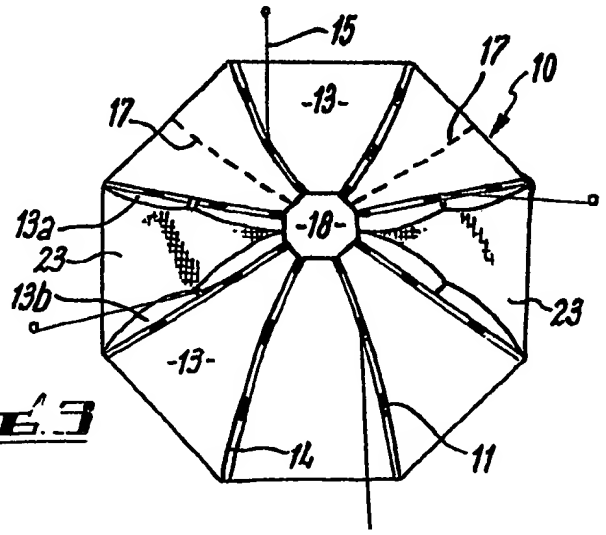


FIG.3

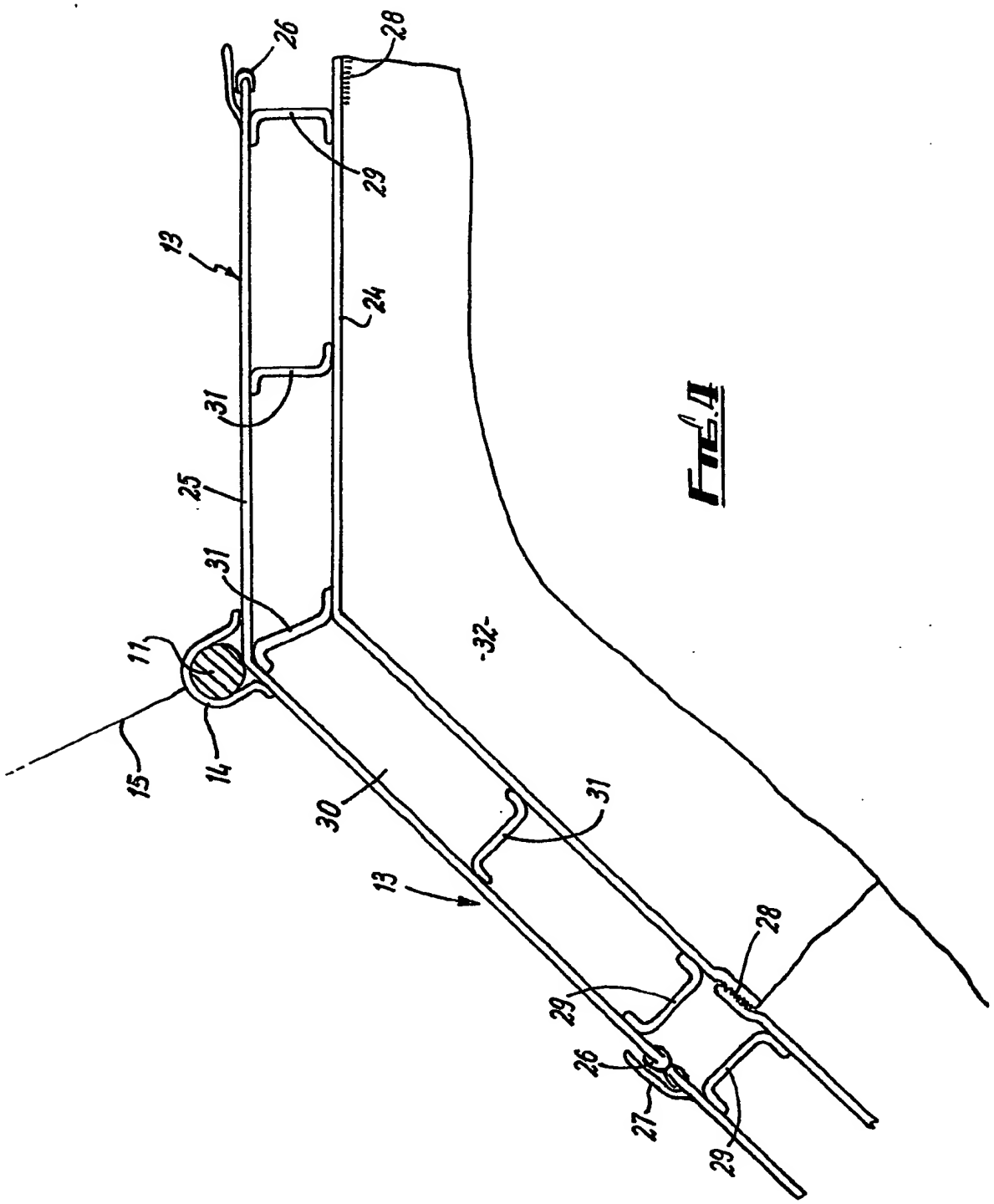


FIG. 4

SPECIFICATION
Tents

This invention relates to tents, and has particular but not exclusive applicability to tents for use by campers or the like in conditions wherein a relatively large temperature differential between the inside and the outside of the tent is likely to occur. In such conditions condensation on the inside of the tent can readily occur and it is an object of the present invention to provide a tent in which such tendency is eliminated or at least substantially reduced.

The invention provides a tent comprising sheet means and supporting means therefor, said sheet means comprising inner and outer fabric sheets secured to each other in spaced disposition to define a cavity therebetween at a plurality of spaced locations by flexible securing means.

The sheet means may comprise a plurality of panels, the inner fabric sheet of each panel being secured to the outer fabric sheet of that panel by means of a fabric strip secured to and extending adjacent substantially mutually aligned edges of said inner and said outer fabric sheet. The inner fabric sheet and the outer fabric sheet of a panel may also be secured to each other by means of a plurality of fabric ties disposed at spaced locations in said panel.

The supporting means may comprise a plurality of rods and the inner or outer fabric sheet of each panel may be provided with at least one pocket or loop adapted to receive a rod to pass therethrough. Each rod may comprise a plurality of rod sections adapted for mutual end-to-end engagement.

The tent may also comprise a capping plate having a plurality of holes therein in spaced disposition around the periphery thereof, each hole being adapted to receive an end of a rod therein. Alternatively each rod may be bent through an angle of between 90 and 180° so that in use opposed ends thereof contact the ground and the rods support the sheet means. In this way a degree of bending stress or tension can be applied to the rods on erection of the tent to aid stability thereof. The tent may also comprise a fabric capping sheet having a plurality of attachment means secured thereto, each adapted to attach said capping sheet to a rod or panel to locate said capping sheet in overlying relation with said capping plate.

Each of said panels may be releasably attached to an adjacent panel by fastening means such as a sliding clasp fastener, hooks and eyes, and/or by means of a touch-n-close fastener such as a VELCRO (Registered Trade Mark) fastener. The outer fabric sheets of adjacent panels may be attached to each other by one of the aforesaid fastening means, e.g. a sliding fastener and the inner fabric sheets of adjacent panels may be attached to each other by the same or another of the aforesaid fastening, e.g. a touch-n-close fastener.

The tent may further comprise at least one canopy, the or each canopy comprising a canopy sheet and a support therefor. The or each canopy sheet may comprise attachment means whereby an edge of said canopy sheet may be attached to a rod or rods of said tent.

One embodiment of tent in accordance with the invention will now be described with reference to the accompanying drawings in which:—

Fig. 1 is a perspective view,

Fig. 2 is a sectional elevation,

Fig. 3 is a plan view with the canopies removed, and

Fig. 4 is a sectional plan view of a panel.

Referring now to Figs. 1 to 3, there is shown a tent 10 which is of octagonal planform and has upwardly curved walls providing a substantially hemispherical enclosure. The support for the tent 10 is provided by eight curved rods 11 which preferably are of fibre glass but may be of any suitable material. Each rod 11 comprises a number of rod sections which are mutually engageable in end-to-end relationship in known manner. The upper end of each rod 11 is inserted into one of eight receiving holes equi-spaced around the periphery of a capping plate 12, which may also be of fibre glass or any other suitable material such as a plastics material. The rods 11 and capping plate 12 when thus assembled form a self-supporting spider structure.

The tent 10 comprises eight panels 13, each of which when laid flat is of substantially isosceles triangular form, i.e. having a base edge 16 and two equal side edges 17. Disposed along the centre line of each panel are pockets 14 into which a rod 11 is threaded on assembly of the tent 10, and adjacent panels 13 are attached to each other as will be described hereafter. Guy lines or ropes 15 are attached to the rods 11 or the panels 13 to secure the tent 10 to the ground in known manner. The base edge of each panel 13 may also be provided with peg-receiving loops (not shown) by means of which the base edges of the panels 13 may be secured to the ground, also in conventional manner.

To prevent the ingress of water at the apex of the tent 10 a capping sheet 18 is provided to overlie the capping plate 12. The capping sheet 18 is of larger area than the capping plate 12 and in consequence overlies the tops of rods 11 and part of each uppermost pocket 14. Ties 19 secure the capping sheet 18 to the rods 11 or to pockets 14.

In the embodiment shown two canopies 20 are shown, secured to the tent 10 at opposed sides thereof. Each canopy 20 comprises a canopy sheet 21 which is supported by poles 22 and which is attached to adjacent poles 14 by means of pockets, ties or other fastening means (not shown). The two half panels 13*a*, 13*b* which are adjacent each other beneath a canopy 20 may be used as a door in order to gain access to the tent 10, the canopy 20 reducing the risk of getting the interior of tent 10 wet if the doorway is used whilst rain is falling. A mesh inner door 23 is provided in order to prevent unwanted animals,

insects and the like from entering the tent 10.

Referring now to Fig. 4 there is shown a panel 13 in sectional plan view. The panel 13 comprises an inner fabric sheet 24 and an outer fabric sheet 25. The pockets 14 into which rods 11 are inserted are secured to the outside of the outer sheet 25 to extend along the centreline of the panel 13, although the pockets 14 could be secured to the inside of outer sheet 25 or either side of inner sheet 24 is desired. Part of a fastener 26 is attached to each side edge of the outer sheet 25 so that adjacent outer panels can be disengagingly attached to each other. A flap 27 covers the fastener 26 to prevent water ingress therethrough. Adjacent inner sheets 24 are disengagingly attached to each other by fasteners 28. As shown fasteners 26 are of the sliding clasp type and fasteners 28 are of the touch-n-close type such as VELCRO (R.T.M.) although in either case either of these or other fastening means such as hooks and eyes or the like may be used if desired. The inner and outer sheets 24, 25 are maintained in their relative disposition by means of fabric strips 29 adjacent their side edges so that a cavity 30 is formed between the sheets 24, 25. Additional ties 31 are provided to maintain the relative disposition of sheets 24, 25. Since the outer sheet 25 is supported by rods 11 the weight of the inner sheet 24 tends to keep it away from outer sheet 25 so as to tension strips 29 and ties 31 and to maintain the cavity 30. In this way, even if there is a relatively large temperature differential between the outside and the inside of the tent 10 condensation on the inner sheet 24 is prevented or at least considerably reduced by comparison with conventional tents. This is of particular importance if the material of the tent is of the 'non-breathing' kind, i.e. completely water-impervious, as is used by mountaineers.

Also shown in Fig. 4 is a flap 32 which is provided along the base edges 16 of the panels 13, which in use underlies a ground sheet (not shown) in conventional manner.

Alternative configurations of tent in accordance with the invention will be readily apparent to persons skilled in the art. For example the tent may comprise a single or any number of panels 13 as desired. Furthermore additional rectangular panels may be provided and inserted on opposite sides of the tent to provide an elongate tent with ends formed by one half of the tent shown in the accompanying drawings.

The capping plate 12 of the embodiment described may be omitted and each rod be bent through an angle of between 90° and 180° so that opposed ends thereof rest on the ground. In this case the rods may be continuously curved as shown in Fig. 2 or may have straight sections with one or more discrete bends therein. The lengths of such rods in this case will have to differ slightly in order that one rod can pass over another rod at the apex of the tent. Instead of the pockets 14 of the described embodiment loops, ties or other attachment means may be provided if desired for attachment of the outer fabric sheet to the rods.

Although an octagonal tent is shown a tent of any other polygonal shape may be provided. Also the pockets 14 or their equivalent may be disposed other than on the centre-line of a panel 13.

CLAIMS

1. A tent comprising sheet means and supporting means therefor, said sheet means comprising inner and outer fabric sheets secured to each other in spaced disposition to define a cavity therebetween at a plurality of spaced locations by flexible securing means.

2. A tent according to claim 1 wherein said flexible securing means comprises a fabric strip.

3. A tent according to claim 1 or claim 2 wherein said sheet means comprises a plurality of panels, the inner fabric sheet of each panel being secured to the outer fabric sheet of said panel by said flexible securing means.

4. A tent according to claim 3 wherein said inner and outer fabric sheets are secured to each other by means of a fabric strip secured to and extending adjacent substantially mutually aligned edges of said inner and said outer fabric sheet.

5. A tent according to claim 3 or claim 4 wherein said inner and outer fabric sheets are secured to each other by means of a plurality of fabric ties disposed at spaced locations in said panel.

6. A tent according to any one of claims 1 to 5 wherein said supporting means comprises a plurality of rods.

7. A tent according to claim 6 wherein each rod comprises a plurality of rod sections adapted for mutual end-to-end engagement.

8. A tent according to claim 6 or claim 7 comprising eight rods which in use are curved.

9. A tent according to claim 8 wherein said rods are of fibre glass.

10. A tent according to any one of claims 6 to 9 comprising a capping plate having a plurality of holes therein in spaced disposition around the periphery thereof, each hole being adapted to receive an end of a rod therein.

11. A tent according to claim 10 wherein said capping plate is of a plastics material.

12. A tent according to claim 10 or claim 11 comprising a fabric capping sheet having a plurality of attachment means secured thereto.

13. A tent according to claim 10 wherein each attachment means is adapted to attach said capping sheet to a rod to locate said capping sheet in overlying relationship with said capping plate.

14. A tent according to claim 10 wherein each attachment means is adapted to attach said capping sheet to said sheet means to locate said capping sheet in overlying relationship with said capping plate.

15. A tent according to any one of claims 6 or 7 wherein each rod is bent whereby in use opposed ends thereof may contact the ground and said rod support said sheet means.

16. A tent according to claim 15 wherein each rod is bent through an angle of between 90° and

180°.

17. A tent according to any one of claims 6 to 16 wherein said sheet means is provided with a plurality of loops each adapted to receive a rod to pass therethrough.

18. A tent according to claim 3 or any claim dependent thereon wherein each of said panels is secured to an adjacent panel by releasable attachment means.

19. A tent according to claim 18 wherein the outer fabric sheet of each panel is releasably secured to the outer fabric sheet of an adjacent panel and the inner fabric sheet of each panel is releasably secured to the inner fabric sheet of an adjacent panel.

20. A tent according to any one of claims 1 to 19 further comprising at least one canopy.

21. A tent according to claim 20 wherein the or each canopy comprises a canopy sheet and a support therefor.

22. A tent according to claim 21 wherein the or each canopy sheet comprises attachment means adapted to secure an edge of said canopy sheet to the support means of said tent.

23. A tent according to claim 3 or any claim dependent thereon wherein each of said panels is of isosceles triangular planform.

24. A tent according to claim 23 providing a substantially hemispherical enclosure therein.

25. A tent according to any one of claims 1 to 24 and a plurality of guy ropes attached thereto.

26. A tent according to any one of claims 1 to 25 wherein said sheet means is provided with a plurality of loops secured thereto adjacent the bottom edge thereof, each loop adapted to receive a tent peg therethrough.

27. A tent substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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